FracCalc Pseudocode

11/13/15

Checkpoint 1: Main loop that asks for input and handles “quit”, test plan

import java.util.Scanner; // import of Scanner

Classes:

**public class Main**{ //for main method

public static void Main(String[] args){ // main method, which takes user input for the numbers and returns the answer

-create a new Scanner object

-print out “Input or quit:”

-user inputs the whole equation, using Scanner object

-if “quit” is entered, stop program execution

-otherwise, continue with program

-perform the operation (within FracCalc class)

-print the final answer

**public class FracCalc**{ //FracCalc class

-create int numerator instance variable

-create int denominator instance variable

public FracCalc() { // constructor

Checkpoint 2: Parses the fractions (show as improper fraction) and shows operations entered

-take the whole String operation from Main class

-separate into three parts: first number, operation, and second number (parsing the fractions) (also recognize “-” before a number as a negative number)

-convert mixed numbers to improper fractions (a\_b/c to ( ((ac)+b)/c ) )

-take the String values for the first fraction (numerator/denominator), set to an int value (called fraction1)

-take the String values for the second fraction (numerator/denominator), set to an int value (called fraction2)

-get the int numerator value

-get the int denominator value

-set the denominators of the two int values equal to each other by multiplying, and set numerators to corresponding values ( (a/b) & (c/d) to (ad/bd) & (cb/bd) )

-set operation to corresponding method:

-read the operation input as “+” as addition, leads to addition method

-read the operation input as “-” as subtraction, leads to subtraction method

-read the operation input as “\*” as multiplication, leads to multiplication methods

-read the operation input as “/” as division, leads to division method

Checkpoint 3: One operation (\*, -, +, /) fully functional, including improper and mixed fractions.

public String add(FracCalc frac) { //takes the two numbers and adds them together

-add fraction1 numerator + fraction2 numerator (=answer /denominator) ( (x/z) +(y/z) = ( (x+y)/z )

-if possible, reduce the fraction

-convert added value (answer) to mixed number ( ((ac)+b)/c ) to (a\_b/c) )

-return the final value (=answer, is printed in Main method)

}

public String subtract(FracCalc frac) { //takes the two numbers and subtracts the values

-subtract fraction1 numerator - fraction2 numerator (=answer /denominator) ( (x/z) - (y/z) = ( (x-y)/z )

-if possible, reduce the fraction

-convert subtracted value (answer) to mixed number ( ((ac)+b)/c ) to (a\_b/c) )

-return the final value (=answer, is printed in Main method)

}

public String multiply(FracCalc frac) { //takes the two numbers and multiplies the values

-multiply fraction1 numerator \* fraction2 numerator (=answer /denominator) ( (x/z) \* (y/z) = ( (xy)/z )

-if possible, reduce the fraction

-convert multiplied value (answer) to mixed number ( ((ac)+b)/c ) to (a\_b/c) )

-return the final value (=answer, is printed in Main method)

}

public String divide(FracCalc frac) { //takes the two numbers and divides the values

-divide fraction1 numerator / fraction2 numerator (=answer /denominator) ( (x/z) /(y/z) = ( (x/y)/z )

-if possible, reduce the fraction

-convert divided value (answer) to mixed number ( ((ac)+b)/c ) to (a\_b/c) )

-return the final value (=answer, is printed in Main method)

}

import java.lang.Integer; //Class integer from JavaDocs

static int parseInt(String s)

Integer.parseInt(s) // returns int to store in int variable

public int getNumerator(inputed value from Main class) {

return the numerator value;

}

public int getDenominator(inputed value from Main class) {

return the denominator value;

}